

SONY®

3-798-554-21(1)

Stereo Cassette Deck

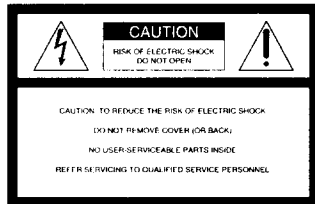
Operating Instructions

TC-WR465

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For the customers in the United States



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Owner's Record

The model and serial numbers are located on the rear of the unit.

Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. TC-WR465

Serial No. _____

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

For the customers in Canada

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e. marked with ⚡ or ⚡ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

IMPORTANT

If the plug supplied is not suitable for the socket outlets in your home, it should be cut off and an appropriate plug fitted in accordance with the following instructions.

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red. Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol $\perp$ or coloured green or green-and-yellow.

WARNING

To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be destroyed.

Welcome!

Thank you for purchasing the Sony Stereo Cassette Deck. Before operating the unit, please read this manual thoroughly and retain it for future reference.

About This Manual

The instructions in this manual are for TC-WR465.

Convention

The following icon is used in this manual:



Indicates hints and tips for making the task easier.

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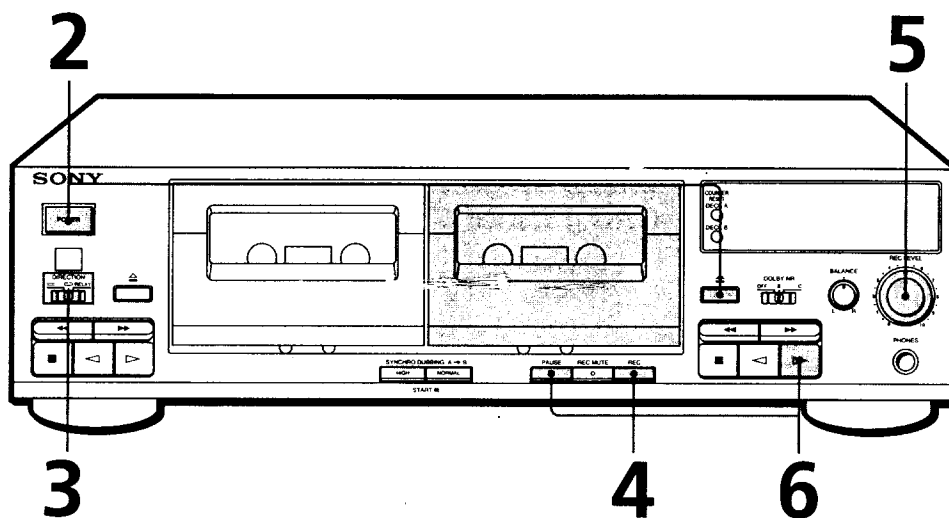
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Recording on a Tape



- See page 7 for hookup information.
- Use deck B (on your right hand side) for recording.
- Refer to "Dubbing a Tape" (page 8) to make a copy of the tape.

Note

When deck B is recording or in recording pause, all buttons on deck A do not work.

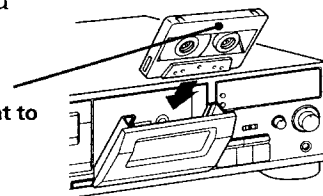


To protect recordings against accidental erasure
Break out the record-protect tab(s) (see page 10).

1 Turn on the amplifier and play the program source you want to record.

2 Press POWER, and then press  and insert a cassette into deck B.

With the side you want to record facing you



3 Set DIRECTION.

To record on	Set to
Only one side	
Both sides*	

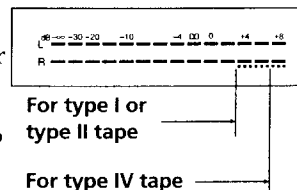
* Recording stops when the tape reaches the end of reverse side.

4 Press REC ●.
"▷" lights up for recording on the side facing you. If it doesn't, press ▷ once.

5 Turn REC LEVEL to adjust the recording level.

Turn REC LEVEL so that the peak level meters reach the recommended level for the corresponding tape type.

After you've done the adjustments, stop playing the program source.

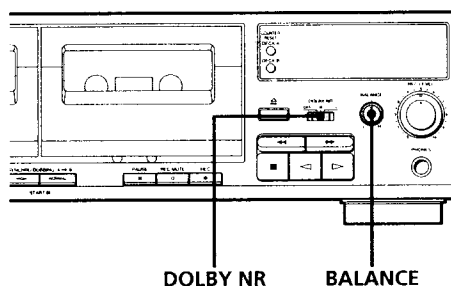


6 Press PAUSE  or ▷.
Recording starts.

7 Start playing the program source.

To	Press
Stop recording	■
Start recording from the reverse side	◀
Pause	PAUSE ■■. Press the button again to resume recording.
Take out the cassette	⏏ after stopping recording

Use these buttons (controls) for additional operations



💡 What is the Dolby NR* system?

The Dolby NR (noise reduction) system eliminates tape hiss noise by boosting low-level signals in the high-frequency range during recording, then lowering them during playback. Type C provides greater noise reduction than type B.

💡 The Dolby HX PRO* system automatically works during recording

Distortion and noise in the high-frequency response are reduced to produce high-quality sound that can be enjoyed even during playback on other tape decks.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY," the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

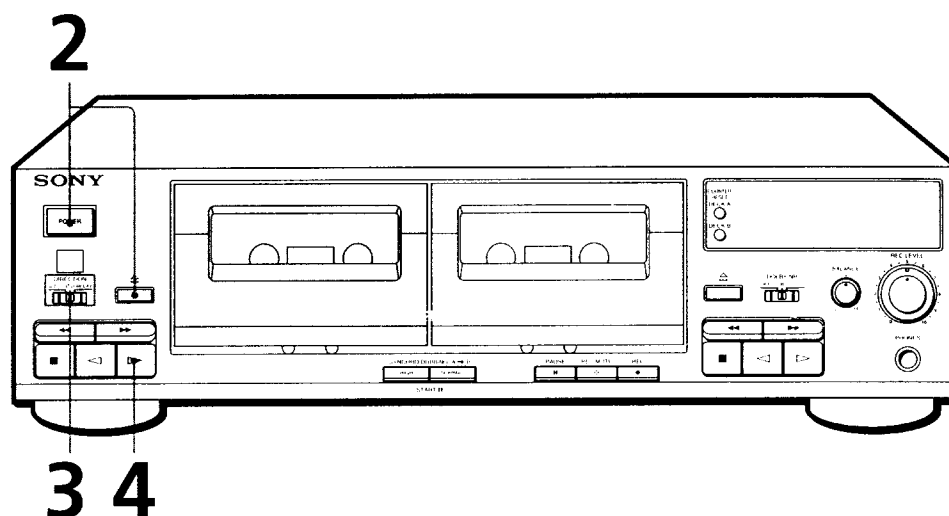
To adjust balance

Turn BALANCE so that L (left) and R (right) of the peak level meters in the display are at the levels you want.

To record with the Dolby NR* system

Set DOLBY NR to B or C before you start recording.

Playing a Tape

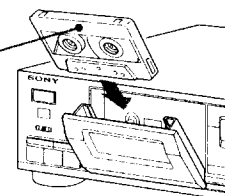


- See page 7 for hookup information.
- You can use either deck for playback.

1 Turn on the amplifier and select the tape deck position.

2 Press POWER, and then press and insert a cassette.

With the side you want to play facing you



3 Set DIRECTION.

To play back	Set to
One side only	
Both sides continuously*	
Both decks in succession*	RELAY

* The deck automatically stops after playing back five times.

4 Press .
The deck starts playing. Adjust the volume on the amplifier.

To locate the beginning of a tape and start playback automatically (Auto Play)
Press while holding down . For the reverse side, press while holding down .

To play a tape recorded with the Dolby NR system
Set DOLBY NR to the same position that the tape was recorded in—B or C.

You can connect the headphones to PHONES

To	Press
Stop playing	
Start playback from the reverse side	
Pause (deck B only)	PAUSE . Press the button again to resume play.
Fast-forward or rewind	or when the deck is stopped
Take out the cassette	after stopping playing

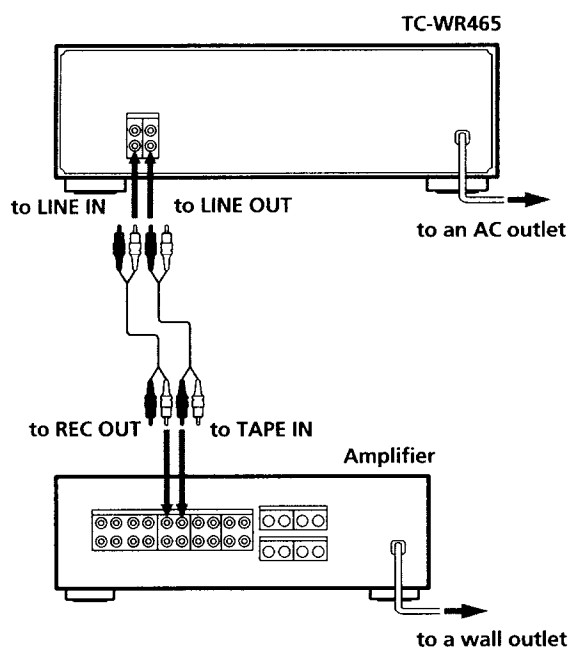
Unpacking

Check that you received the following items:

- Audio connecting cords (2)

Hooking Up the System

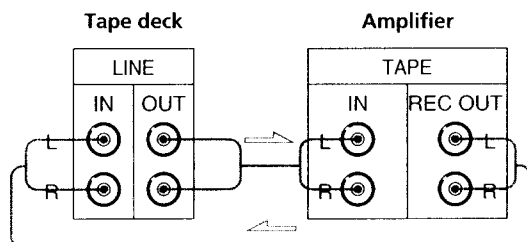
This section describes how to hook up the tape deck to an amplifier. Be sure to turn off the power of each component before making the connections.



Hookups

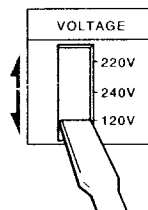
When connecting an audio cord, be sure to match the color-coded cord to the appropriate jacks on the components: Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.

Connect the tape deck to the amplifier as shown below.



Setting the voltage selector (only on models supplied with a voltage selector)

Check that the voltage selector on the rear panel of the tape deck is set to the local power line voltage. If not, set the selector to the correct position using a screwdriver before connecting the AC power cord to an AC outlet.



Connecting the AC power cord

Connect the AC power cord to an AC outlet.

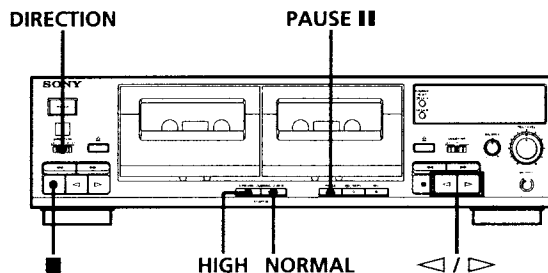
Where do I go next?

Now you're ready to use your tape deck.

For basic operations, go to pages 4 to 6; for advanced operations, go to the sections immediately after this one.

Dubbing a Tape

You can copy a tape in deck A to a tape in deck B at normal or high speed.



- 1 Insert the recorded cassette into deck A and a blank cassette into deck B.
Make sure the record-protect tabs on the cassette in deck B have not been removed.

- 2 Select the side(s) to be recorded on.

To record on	Set DIRECTION to
One side	→
Both sides	↔
	Recording on the reverse side on deck B starts independently of playback on deck A.
	RELAY. Recording on the reverse side on deck B starts simultaneously with playback of the reverse side on deck A.

- 3 Press HIGH or NORMAL to select the dubbing speed.
"HIGH" or "NORM" appears in the display.
The tape deck changes to dubbing standby.

- 4 Select the side from which to start dubbing.

To record from	Press
The front side	▷
The reverse side	◁

- 5 Press PAUSE ■ to start dubbing.

To stop dubbing

During	Press
Normal-speed dubbing	■ on deck B
High-speed dubbing	■ on either deck

During high-speed dubbing
Only ■ is operative.

You don't have to adjust the recording level or select the Dolby NR system during dubbing

Dubbing is automatically performed with the same recording level and Dolby NR system as the original in deck A. If, however, you want to monitor the sound during normal-speed dubbing, set DOLBY NR to match the tape in deck A (see page 5).

Note

If a TV set is placed near the tape deck, noise may occur during high-speed dubbing. In that case, turn the television set off or move it away from the tape deck.

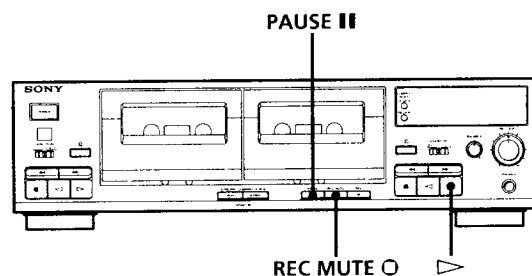
Dubbing only specific portions

You can do this only during the normal-speed dubbing.

- 1 Press ■ on deck A at the portion you want to skip.
Deck B changes to recording pause.
- 2 Locate the point you want to resume recording on deck A, then stop the tape.
- 3 Press PAUSE ■ to resume dubbing.

Inserting a Blank Space During Recording (Record Muting)

You can insert a blank space of 4 seconds between each track or erase unwanted portions on a tape.



- 1** Start recording.
- 2** Press REC MUTE ○ where you want to insert a blank space.
"REC" flashes in the display and a blank is recorded on the tape.
After 4 seconds, "||" lights up and the tape deck changes to recording pause.

- 3** Press PAUSE || or ▷ to resume recording.



If you want to insert a blank space longer than 4 seconds

Hold down REC MUTE ○ as long as you want. After 4 seconds, "REC" flashes faster.

When you release REC MUTE ○, "||" lights up and the tape deck changes to recording pause.

Press PAUSE || or ▷ to resume recording.

Precautions

On safety

- Do not disassemble the cabinet — this may result in an electrical shock. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the cabinet, unplug the tape deck and have it checked by qualified personnel before operating it any further.

On power sources

- Before operating the tape deck, check that the operating voltage of the tape deck is identical with your local power supply. The operating voltage is indicated on the nameplate at the rear of the tape deck.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- If you are not going to use the tape deck for a long time, be sure to disconnect the tape deck from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- AC power cord must be changed only at the qualified service shop.

On operation

Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if a cassette has been incorrectly inserted into the cassette holder.

On placement

- Place the tape deck in a location with adequate ventilation to prevent heat build-up in the tape deck.
- Do not place the tape deck:
 - on a soft surface such as a rug that might block the ventilation holes on the bottom.
 - in a location near heat sources.
 - in a place subject to direct sunlight.
 - in an inclined position.
 - in a place subject to excessive dust or mechanical shock.

On cleaning the tape deck

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

For the customers in the United States

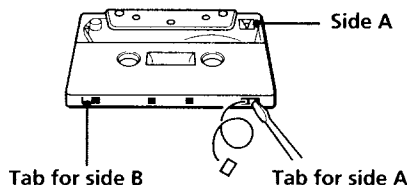
For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

If you have any questions or problems concerning your tape deck, please consult your nearest Sony dealer.

Notes on Cassette Tapes

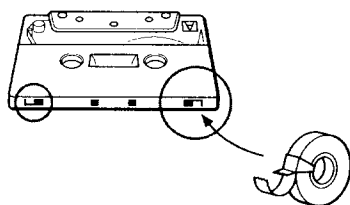
To protect a recording on side A or B

Break out the respective tab.

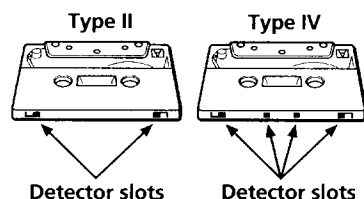


To record on a tape with a missing record-protect tab

Cover the respective tab hole with adhesive tape.



When you are using a type II or type IV tape, be careful not to cover the detector slots that the deck uses to determine the tape type.



On tapes longer than 90 minutes

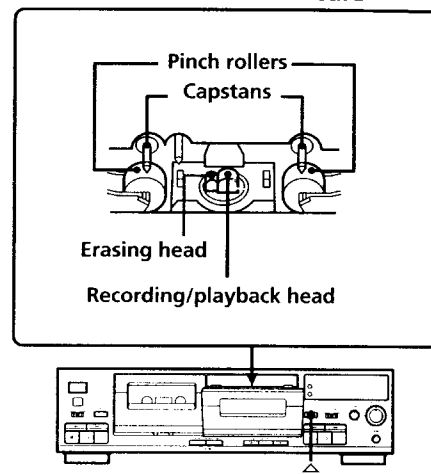
We do not recommend the use of tapes longer than 90 minutes except for a long continuous recording or playback. They are very thin and tend to stretch easily.

On handling cassettes

- To prevent the heads and tape path from getting dirty, avoid touching the tape surface of a cassette.
- Place cassettes away from equipment with magnets, such as speakers and amplifiers, which may cause tape distortion or erase the recordings.
- Do not expose cassettes to direct sunlight, extremely cold temperature, or moisture.

Cleaning

Inside the cassette holder of Deck B



Cleaning the heads and tape path

Clean the heads and tape path of the tape deck after every 10 hours of operation to guard against:

- low-quality sound
- a decrease in sound level
- excessive wow or flutter
- sound dropout
- incomplete erasure
- impairment of recording function

To ensure better recording, we recommend that you clean the heads and tape path before every recording.

- 1 Press to open the cassette holder. Grasp the front cover on both sides and gently lift to remove it.
- 2 With the tape deck turned off, wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with alcohol or a commercially available cleaning fluid for tape decks.
- 3 Replace the front cover.

Demagnetizing the heads

After 20 to 30 hours of use, or when you notice a hissing sound or loss of high frequencies, demagnetize the heads with a commercially available demagnetizer for tape decks. Please refer to the instructions of the demagnetizer.

Troubleshooting

If you've experienced any of the following difficulties while using the tape deck, use this troubleshooting guide to help you remedy the problem. Should the problem persist, consult your nearest Sony dealer.

The function buttons do not work.

- ➔ The tape deck has been just turned on and does not operate for about 3 seconds. Wait until "II" stops flashing.
- ➔ Check that the cassette is inserted correctly and the cassette holder is closed completely.

The tape deck does not play or record.

- ➔ There is no cassette in the cassette holder.
- ➔ The tape has come to the end.
- ➔ The tape is slack. Take up the tape slack.
- ➔ The record-protect tab has been removed from the cassette (see page 10).
- ➔ Make sure the amplifier setting is correct.
- ➔ Check that the tape deck connections are secure.
- ➔ The heads and tape path are dirty. Clean them (see page 10).
- ➔ The recording/playback head is magnetized. Demagnetize it (see page 10).

There is excessive wow, flutter or sound drop-out.

- ➔ The capstans and pinch rollers are dirty. Clean them (see page 10).

There is a decrease in sound level, sound drop-out, or poor reproduction of high frequencies./The tape does not erase completely./Noise increases.

- ➔ The recording/playback head and tape path are dirty. Clean them (see page 10).
- ➔ The recording/playback head is magnetized. Demagnetize it (see page 10).

There is hum or noise.

- ➔ The tape deck is placed near a TV or VCR. Move the tape deck away from the TV or VCR.
- ➔ The tape deck is placed on or under the amplifier. Move the tape deck away from the amplifier.

There is an unbalanced tone.

- ➔ Check that DOLBY NR position is the same as when the tape was recorded.
- ➔ The tape deck is placed near a TV or VCR. Move the tape deck away from the TV or VCR.

The tape stops before the tape has been fully rewound.

- ➔ The tape is slack. Take up the tape slack.
- ➔ The cassette shell is bent. Use another cassette.

There is excessively loud tape transport noise during fast-forwarding or rewinding.

- ➔ This noise is caused by the cassette and is not a mechanical problem.

⏻ does not work.

- ➔ There has been a power failure or the power cord has been disconnected during tape operation. Reconnect the power.

There is a short break in sound output during playback.

- ➔ You pressed ►►, ◀◀, or ■ on one deck while the other deck was playing.
Or you pressed PAUSE II, ▷, or ◁ on deck B while deck A was playing.

Specifications

System

Recording system

4-track 2-channel stereo

Fast-winding time (approx)

180 sec. (with Sony C-60 cassette)

Bias

AC bias

Signal-to-noise ratio (at peak level and weighted with Dolby NR off)

Type I tape, Sony Type I (NORMAL): 55 dB

Type II tape, Sony Type II (HIGH): 57 dB

Type IV tape, Sony Type IV (METAL): 58 dB

S/N ratio improvement (approximate values)

With Dolby B NR on: 5 dB at 1 kHz, 10 dB at 5 kHz

With Dolby C NR on: 15 dB at 500 Hz, 20 dB at 1 kHz

Harmonic distortion

0.4% (with Type I tape, Sony Type I (NORMAL):

160 nWb/m, 315 Hz, 3rd H.D.)

1.8% (with Type IV tape, Sony Type IV (METAL):

250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (Dolby NR off)

Type I tape, Sony Type I (NORMAL): 30 - 15,000 Hz
(±3 dB, IEC)

Type II tape, Sony Type II (HIGH): 30 - 17,000 Hz
(±3 dB, IEC)

Type IV tape, Sony Type IV (METAL): 30 - 18,000 Hz
(±3 dB, IEC)

30 - 13,000 Hz (±3 dB (-4 dB) recording)

Wow and flutter

±0.15% W. Peak (IEC)

0.1% W. RMS (NAB)

±0.2% W. Peak (DIN)

Inputs

Line inputs (phono jacks)

Sensitivity : 0.16 V

Input impedance : 47 kilohms

Outputs

Line outputs (phono jacks)

Rated output level : 0.5 V at a load impedance of
47 kilohms

Load impedance : Over 10 kilohms

Headphones (stereo phone jack)

Output level : 1 mW at a load impedance of
32 ohms

General

Power requirements

Where purchased	Power requirements
U.S.A. and Canada	120 V AC, 60 Hz
U.K. and Continental Europe	220 - 230 V AC, 50/60 Hz
Australia	240 V AC, 50/60 Hz
Other countries	120/220/240 V AC, 50/60 Hz

Power consumption

19 W

Dimensions (approx) (w/h/d)

430 × 123 × 305 mm (w/h/d)

(17 × 4 7/8 × 12 1/8 inches)

including projecting parts and controls

Mass (approx)

4.1 kg (9 lbs 1 oz)

Supplied accessories

Audio connecting cords (2 phono plugs - 2 phono
plugs) (2)

Optional accessory

Remote commander RM-J902

Design and specifications are subject to change without
notice.

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Names of Controls

Buttons

- ⏏ (eject) 4 - 6, 10, 11
- HIGH 8
- NORMAL 8
- PAUSE  4 - 6, 8, 9, 11
- REC  (recording) 4
- REC MUTE  (record muting) 9
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- REC (recording) LEVEL 4

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